

AMENDMENTS TO THE CLAIMS

- 1-6. (canceled)
7. (currently amended) A composition containing a labile disulfide bond for inserting into an organism[[,]] formed by the process comprising:
- a) forming a compound comprising a disulfide bond and at least one electron withdrawing group wherein the disulfide bond is located between at least two reactive groups; and,
 - b) forming that have reacted to form covalent bonds with different separate molecules on each side of the disulfide bond via the reactive groups, wherein the electron withdrawing group facilitates cleavage of the disulfide bond such that the disulfide bond is labile and is cleaved more rapidly than oxidized glutathione and wherein cleavage of the disulfide bond results in the formation of two molecules.
8. (previously presented) The composition of claim 7 wherein the composition is amphipathic.
9. (previously presented) The composition of claim 7 wherein the composition comprises a polymer.
10. (previously presented) The composition of claim 7 wherein the composition is selected from the group consisting of a polycation, a polyanion, a neutral polymer, and an amphipathic polymer.
11. (previously presented) The composition of claim 7 wherein the composition contains a ligand.
- 12-18. (canceled)
19. (currently amended) ~~A composition for inserting into an organism, comprising: a disulfide bond that is labile under physiologic conditions and constructed from thiols in which one of the constituent thiols has a lower pKa than glutathione resulting in the formation of two molecules.~~
- A composition containing a labile disulfide bond for inserting into an organism formed by the process comprising:
- a) forming a compound containing a disulfide bond and at least one electron withdrawing group wherein the disulfide bond is located between at least two reactive groups; and,
 - b) forming covalent bonds with separate molecules on each side of the disulfide bond via the reactive groups, wherein the electron withdrawing group reduces the pKa of at least one

of the constituent thiols of the disulfide bond to less than glutathione thiol pKa and wherein cleavage of the disulfide bond results in the formation of two molecules.

20. (previously presented) The composition of claim 19 wherein the composition is amphipathic.
21. (previously presented) The composition of claim 19 wherein the composition comprises a polymer.
22. (previously presented) The composition of claim 21 wherein the polymer is selected from the group consisting of a polycation, a polyanion, a neutral polymer, and an amphipathic polymer.
23. (previously presented) The composition of claim 19 wherein the composition contains a ligand.
24. (currently amended) ~~A composition for inserting into an organism, comprising: a disulfide bond that is activated by intramolecular attack from a free thiol such that it is cleaved more rapidly than oxidized glutathione wherein at least two reactable groups, at least one on each side of the disulfide bond, have reacted to form covalent bonds with at least one molecule on each side of the disulfide bond, such that cleavage of the disulfide bond results in the formation of two molecules.~~

A composition containing a labile disulfide bond for inserting into an organism:

- a) forming a compound comprising a first disulfide bond and at least one electron withdrawing group wherein the disulfide bond is located between at least two reactive groups; and,
- b) forming covalent bonds with separate molecules on each side of the first disulfide bond via the reactive groups wherein at least one of the molecules contains a second disulfide bond or a thiol group and wherein the first disulfide bond is activated by intramolecular attack from a free thiol such that it is cleaved more rapidly than oxidized glutathione and cleavage of the first disulfide bond results in the formation of two molecules.
25. (previously presented) The composition of claim 24 wherein the composition is amphipathic.
26. (previously presented) The composition of claim 24 wherein the composition comprises a polymer.

27. (previously presented) The composition of claim 26 wherein the polymer is selected from the group consisting of a polycation, a polyanion, a neutral polymer, and an amphipathic polymer.
28. (previously presented) The composition of claim 24 wherein the composition contains a ligand.